


The Americas Group

P O Box 1904, West Sacramento, Ca 95691

March 27, 2014

To Ms Laurie ten Hope, Deputy Director
Energy Research & Development Division
California Energy Commission
1516 9th Street, Sacramento, CA 95814

From Mr Frank Ramirez, President 
The Americas Group
P O Box 1904, West Sacramento, CA 95691 and

California Energy Commission

DOCKETED

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TN 72877

APR 02 2014

National Director for Governmental Affairs

National American Indian Veterans Inc

Dear Ms Hope,

Attached is a summary document on "WaterSavr", which is a *Monolayer that saves between 30% and 35% of water evaporation loss*. I am proposing that WaterSavr be considered for the 2015-2017 Triennial Investment Plans for EPIC funding. This document describes 1 What WaterSavr is, 2 Why I'm proposing the use of WaterSavr for water saving/efficiency and 3 How WaterSavr works.

I am also attaching a document that describes WaterSavr utilization and its pilot test by the Southern Nevada Water Authority. I can provide more detail on WaterSavr and its approval for use in the United States by the U S EPA, NSF and Dept of Fish and Wildlife.

If you need additional information for EPIC funding consideration please feel free to call me at (916) 224-8049 or via email at frankramirez101@hotmail.com. Thanks for your consideration.

1 What

WaterSavr™ is a proven and safe monolayer that saves between 30% to 35% of the evaporation loss on any water. WaterSavr™ has been tested by various water authorities around the world with similar results. The latest trial was done by Southern Nevada Water Authority in Las Vegas and the results were published in AWWA Journal March 2014 edition.

SAFETY

In terms of safety background, our product has gone through rigorous testing both in the US and in international trials. Find attached a link to our NSF / ANSI approval. This live NSF link shows that not only our product, but also our manufacturing facility is constantly monitored to assure safety.

(<http://nsf.org/Certified/PwsChemicals/Listings.asp?CompanyName=&TradeName=watersavr&ChemicalName=&ProductFunction=&PlantState=&PlantCountry=&PlantRegion=>)

Also find attached our EPA Gold Seal approval. Our product has been confirmed to be safe for the environment. Furthermore, find attached a review by a 3rd neutral party called The McGuire Environmental Group (this study was paid by a US Water Authority) that also confirms our safety. Lastly, during our recent trial done with South Nevada Water Authority (SNWA) in Las Vegas in 2012, the actual reservoir required WaterSavr™ to receive approval from Nevada Fish and Wildlife. Find attached.

EFFICIENCY

In terms of efficiency of our evaporation reduction, we have had various trials done around the world over the years. All of them have been between 30% to 35% savings of water from evaporation. The most two recent trials were done in Singapore by the Public Utility Board (PUB) and in Las Vegas last year with SNWA. In the case of PUB, this paper was presented at the World Water Forum in 2010 by the senior staff of Singapore PUB. In the case of SNWA, the official scientific paper is being finalized and to be submitted to the American Water Works Association Journal for publication.

Find attached both PUB's paper and presentation from SNWA to the Lake Association for your review. Also find attached our automated spreaders that is used on Lakes and Ponds. For larger bodies of water, (over 200 hectares) WaterSavr™ can also be spread by one of our spreaders behind a boat every three days.

COST

In terms of cost, we can financially prove that our product will cost around \$100 - \$120 per acre foot (depending on local evaporation rates) This is naturally much cheaper than alternatives such as a desalination plant or groundwater pumping, with no environmental issues or large upfront costs

Furthermore, the day your water utility starts using WaterSavr™, you will save water that very same day since evaporation happens all the time The water savings are immediate If the drought happens to end, the client can stop using WaterSavr™ that same week and no longer have any maintenance or ongoing costs associated with saving water

Lastly, I think it is important to note that the largest loss of water in arid areas such as yours, is lost to evaporation In Nevada for example, we know that over 50% of all water loss is through evaporation We believe in California, that loss is similar By saving around 30% of that water, that is a substantial amount of water saved for you

- 2 **Why** WS can increase water supply by reducing water loss thru evaporation If you could kindly provide a specific example of water body that could be treated with WaterSavr™, we can provide a specific saving As an example, a body of water that is 1000 acres in surface area and has a yearly evaporation rate of 5 feet per year, will save over 1,100 acre feet for the evaporation season using WaterSavr™ at an average cost of about \$120 per acre foot (including spreading cost) For a hydro dam, the savings are twofold A) The client will save on water cost and pumping cost (assuming the water needs to be pumped into reservoir), and B) as a dam's water level is lowered, the KWH output of the dam diminishes accordingly If WaterSavr is saving 30% of the evaporation, and the water level drops by 5 feet due to evaporation, the client will be able to keep another 1 ½ foot of water per year

- 3 **How** By reducing water evaporation it would provide more water to feed a hydro-electric system It could save energy by **achieving energy reduction** by reducing the required energy to pump water into holding reservoirs/lakes, etc For example, Los Vaqueros Reservoir in Contra Costa Water District is a reservoir that is filled by pumping water up hill to fill the reservoir (160,000 acre feet reservoir) WS could also reduce the need for pumping groundwater by having more water preserved via reduce

water evaporation (result- lower energy use for pump and protection of the ground water aquifers)

Testing a New Type of Monolayer Evaporative Suppressant for Water Savings in Lakes

Kent Sovocool, Senior Conservation Research Analyst, Southern Nevada Water Authority, kent.sovocool@snwa.com

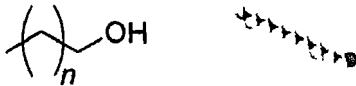
David Verlee, Vice-President of Business Development, Flexible Solutions, Inc., davidv@flexiblesolutions.com

Mitchell Morgan, Assistant Management Analyst, Southern Nevada Water Authority

Michael Drinkwine, Management Aide, Southern Nevada Water Authority

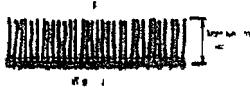
What are monolayers?
Single-molecule thick
layers that impede
evaporation at the surface

Organic Monolayers



Hexadecanol and Octadecanol –
 $\text{CH}_3(\text{CH}_2)_{15(17)}\text{OH}$

Insoluble Fatty Alcohols Natural
Coconut / Palm Sources



Overview

Did you know that three to four times as much water evaporates annually from Lake Mead alone than all of Las Vegas consumes in a year?

Evaporative suppressants can potentially help by reducing evaporative losses

The products have a significant history of testing. The particular product here is unique in that it purportedly exhibits enhanced self-spreading action and thus requires a fraction of the organic long-chain alcohols as those in the past for an equivalent area (90% of the ingredients is food-grade lime). In this Study SNWA examined the use of the product at a manmade Lake (Lake Sahara)

The experiment was done by having comparative (treatment and control) measuring buckets in parts of the lake

Evaporation pan measures and over 15 000 water quality measures were also collected (data not shown)

Demonstration of Self spreading Action

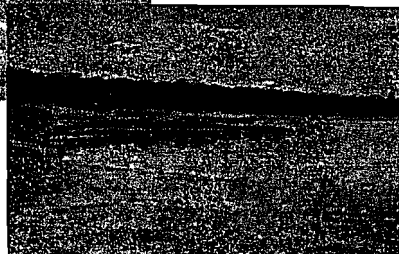
Photos courtesy of WaterSavr



30 seconds later



60 seconds later



Partners

SOUTHERN NEVADA WATER AUTHORITY

www.snwa.com



www.lakesassociation.com



www.flexiblesolutions.com

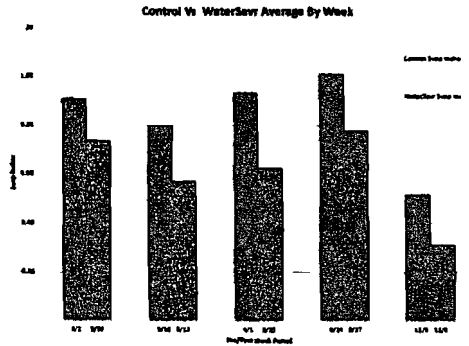
Methods – Compare Evaporation Losses

Paired Comparative (Treatment and Control) Bucket Deployments in 8 different location throughout The Lakes

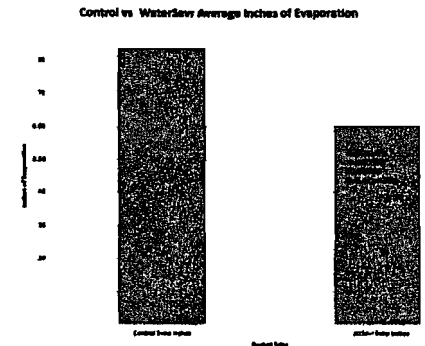


Findings

Average Evaporative Difference By Week Buckets



Average of All Valid Weeks Buckets



Conclusions

In these small scale comparative tests the product significantly reduces evaporative losses approximately 30% (Evaporation pan measures showed 29% savings)

Savings are in alignment with other studies of both monolayers and this new types of monolayer evaporative suppressant

Large scale evaluations still in progress

Community response was very positive

Chemical and Biological tests have thus far shown no deleterious impacts (data not shown) Ongoing monitoring of Dissolved Oxygen and other analytes is continuing

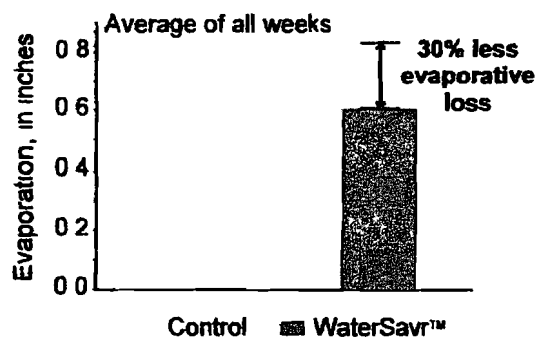
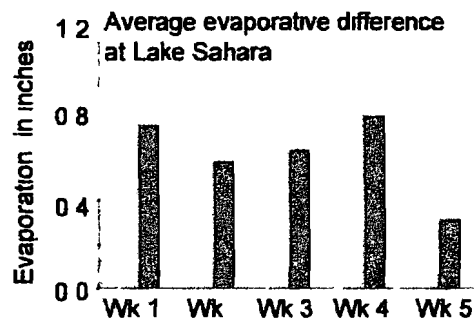
Currently Lakes is dosing full-scale and further results are expected soon Manuscript is in progress

Is WaterSavr™ effective?

Multiple trials done worldwide indicate WaterSavr™ significantly reduces evaporative losses. Australia water authorities 34%, Singapore PUB 32%, Turkey DSI 32%, and USA SNWA 30%.

WaterSavr™ is also proving to be cost effective with most applications in the southwest USA around \$100 per acre-feet of water saved.

The Southern Nevada Water Authority, in cooperation with the US Fish and Wildlife Service, examined the effectiveness of WaterSavr™ on Lake Sahara Las Vegas in 2012. The SNWA trial resulted in average water savings of 30%.



Is it safe?

WaterSavr™ is both NSF and EPA approved.

Over 1,500 water quality tests by the Southern Nevada Water Authority before, during, and after application of WaterSavr™ did not find any negative environmental, health, or safety impacts.



January 30th, 2014

Flexible Solutions' WaterSavr™ saves Eight Million Gallons of Water in Lake Sahara

Trial in record-breaking temperatures, WaterSavr product still delivers an ROI of over 500%

Flexible Solutions is pleased to announce the latest 2013 results from its WaterSavr™ trial at Lake Sahara, Las Vegas done in conjunction with The Lakes Association and South Nevada Water Authority (SNWA)

WaterSavr™ is a safe and effective monolayer that reduces water evaporation by 30% that is used in lakes and reservoirs. Lake Sahara, which was averaging over 7 feet of evaporation annually, chose WaterSavr™ for an initial trial period in 2012. Originally focused in evaporation pans, results showed a 30% savings in water evaporation, which led to a more extensive six-month trial in 2013.

Water saved despite record breaking temperatures

'Although Las Vegas broke many heat records this summer and had unusually high sustained winds, by using WaterSavr™ in our lake, we actually used 8,000,000 gallons of water less than our average water consumption -- in a year where we should have used a great deal more," said Greg Toussaint, President of The Lake Association. "Since we have over 20 years of data on our Lake, we monitored the quality of our water and our wildlife and are pleased to report we did not have any changes in water quality."

Over 500% return on investment

In terms of cost and return on investment, Mr. Toussaint said, "Given our current price of water, our return on investment using WaterSavr™ has exceeded 500% prior to any rebate program. We are very satisfied with this expenditure and our board has just voted to use WaterSavr™ for 9 months in 2014, instead of the 6 months in 2013."

Results to be published in water industry's most prestigious journal

In Lake Sahara, over 1,500 water tests were done prior, during and after the WaterSavr™ trial. The results of these various water tests done by SNWA showed no significant changes in water quality. These positive results will be published in AWWA Journal in March 2014.



Re March 2014 Journal AWWA

We are pleased to share "Testing an innovative evaporative suppressant for reducing losses from lakes " This article describes the results of a 2012 trial using WaterSavr™ on Lake Sahara, Las Vegas The trial was sponsored by the Southern Nevada Water Authority (SNWA)

The trial showed the following results

- **WaterSavr™ saved an average of 30% in both evaporation pan Class A and bucket style trials done throughout Lake Sahara**
- **Over 1,500 water quality tests were done by SNWA before, during and after the trial and showed no water quality changes**
- **The study confirmed our NSF, EPA and Nevada Fish and Wildlife approval status**

This AWWA study has an interesting postscript

After seeing 2012 results, The Lakes Association decided to run its own, six-month trial of WaterSavr™ on Lake Sahara in 2013

Greg Toussaint, President of The Lakes Association was pleased with the results "Despite record-breaking temperatures and unusually high winds, we used 8,000,000 gallons less water than our average water consumption in a year where we should have used a great deal more "

Furthermore, Mr Toussaint shared that "we have over 20 years of data on our Lake We monitored water quality and our wildlife We are pleased to report that neither showed any impact from using WaterSavr™ "

Mr Toussaint concluded with "Given our current price of water, our return on investment from WaterSavr™ exceeds 500% We are very satisfied with this expenditure and our board has voted to use WaterSavr™ for 9 months in 2014 "